

REMARKS

The Office Action dated December 15, 2008 has been received and carefully noted. The above amendments and the following remarks are being submitted as a full and complete response thereto.

Claims 1-20 have been rejected. Claims 9 and 13 have been amended, claims 1-8, 10, 11 and 14-20 have been cancelled. Claims 21-37 have been added and claim 12 has been left in its previously present form. Thus, claims 9, 12, 13 and 21-37 are pending in this application. Support for the amendments may be found in the specification as originally filed. In particular, support for the amendments to 9 and 13 as well as for newly added claims 21-37 may be found in the specification at paragraphs [0032]-[0034]. Applicants submit that no new matter is added. Applicants respectfully request reconsideration and withdrawal of all rejections.

Rejection Under 35 U.S.C. §112

Claims 1-20 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Applicants respectfully submit that the claims 1-8, 10, 11 and 14-20 have been canceled and claims 9 and 13 have been amended to eliminate each of the phrases the Examiner views as indefinite. Further, the subject matter of each of the dispersions formerly included in independent claim 17 has been claimed in the newly added independent claims 26, 30 and 34. Accordingly, Applicants

respectfully request withdrawal of the 35 U.S.C. §112 rejections of the Office Action dated December 15, 2008. If any further amendments are necessary, the Examiner is requested to contact the Applicants through the undersigned representative.

Rejection Under 35 U.S.C. §102

Claims 1-5, 8, 9 and 12 are rejected under 35 U.S.C. §102(b) as being anticipated by Nagasawa et al. (U.S. Patent No. 6,358,611, hereinafter “Nagasawa”). Claims 1-9 and 12 were rejected under 35 U.S.C. §102(a) or 102(b) as being anticipated by Komatsu et al. (U.S. Patent No. 6,730,400 or WO 0076699), hereinafter “Komatsu”). Claims 1-12 were rejected under 35 U.S.C. §102(e) as being anticipated by Peng et al. (U.S. Patent No. 7,160,525, hereinafter “Peng”). It is noted that claims 1-5 and 8 have been cancelled and claim 9 has been amended. Further, claims 21-25, ultimately depending on claim 9, have been added. To the extent that these rejections apply to newly amended claims 9 and its dependents they are respectfully traversed because Nagasawa, Komatsu and Peng fail to teach each and every feature of newly amended claim 9.

For example, newly amended independent claim 9 recites, amongst other features, a method for the preparation of metal nano-particles comprising the steps of “additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas” and “after the adding the reducing agent, adding

deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.” The Applicants respectfully submit that both Nagasawa and Komatsu fail to disclose the method as claimed.

Nagasawa does disclose ultrafine particles comprising an organometallic core and process for production thereof (title). Nagasawa gives seven examples of the best mode for carrying out the invention from column 4 line 67 to column 8 line 5. Despite this, Nagasawa does not teach, disclose or otherwise suggest a step to reduce to give metal nano-particles, much less the specific reducing steps claimed in newly amended independent claim 9. Further, Nagasawa also fails to disclose, teach or otherwise suggest a step to reduce impurities in such a liquid, much less the specific impurity reducing steps claimed in newly amended claim 9. In fact, the words “impurity,” “impurities,” “reduce” or “reduction” are not mentioned in the specification of Nagasawa.

Komatsu does disclose ultrafine composite metal particles and method for manufacturing same (title). Komatsu gives eight examples of the best mode for carrying out the invention from column 10 line 45 to column 15 line 27. Komatsu does disclose a reduction process in column 8 lines 42-6, as cited by Examiner. In particular, Komatsu discloses the use of a “reducing agent” (column 8, line 43) in this process. Despite this, Komatsu, as cited by the Examiner, does not teach, disclose or otherwise suggest introducing a gas in the reducing step, much less the specific reducing steps claimed in newly amended independent claim 9.

Further, Komatsu also fails to disclose, teach or otherwise suggest a step to reduce impurities in such a liquid, much less the specific impurity reducing steps claimed in newly amended claim 9. In fact, neither the word "impurity" nor the word "impurities" is mentioned in the specification of Komatsu.

Peng does disclose monodisperse metal nanocrystals (title). Peng gives several examples of the best mode for carrying out the invention from column 7 line 31 to column 17 line 33. Despite this, Peng, as cited by the Examiner, does not teach, disclose or otherwise suggest a step to reduce to give metal nanoparticles, much less the specific reducing steps claimed in newly amended independent claim 9. Further, Peng, as cited by the Examiner, also fails to disclose, teach or otherwise suggest a step to reduce impurities in such a liquid, much less the specific impurity reducing steps claimed in newly amended claim 9. In fact, neither the word "impurity" nor the word "impurities" is mentioned in the specification of Peng, as cited by the Examiner.

For at least the above reasons, Applicants respectfully submit that Nagasawa, Komatsu and Peng do not anticipate newly amended independent claim 9. Similarly, Applicants respectfully submit that Nagasawa, Komatsu and Peng do not anticipate claims 12, 13 and 21-25 that ultimately depend on newly amended independent claim 9. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §102(b) over Nagasawa and Komatsu, the withdrawal of the rejections under 35 U.S.C. §102(a) over Komatsu and the withdrawal of the rejections under 35 U.S.C. §102(e) over Peng made in the Office Action dated December 15, 2008.

Claims 1-9 and 12-20 were rejected under 35 U.S.C. §102(e) as being anticipated by Matsuba et al. (U.S. Patent No. 7,081,214, hereinafter “Matsuba”). It is noted that claims 1-8 and 14-20 have been cancelled and claim 9 has been amended. Further, the subject matter of former independent claim 17 has been incorporated into newly added independent claims 26, 30 and 34. In addition, claims 21-25, ultimately depending from claim 9, have been added. To the extent that these rejections apply to newly amended claims 9 and its dependents they are respectfully traversed because Matsuba fails to teach each and every feature of newly amended claim 9 as well as newly added independent claims 26, 30 and 34.

For example, newly amended independent claim 9 recites, amongst other features, a method for the preparation of metal nano-particles comprising the steps of “additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas” and “after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.” Similarly, newly added independent claims 26, 30 and 34 recite, amongst other features, methods for the preparation of a metallic wire or a metal film comprising the steps of “additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas” and “after the adding the

reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced.” The Applicants respectfully submit that Matsuba, as cited by the Examiner, fails to disclose the methods as claimed.

Matsuba does disclose an electroconductive metal paste and method for production thereof (title). Matsuba gives several examples of the best mode for carrying out the invention from column 16 line 67 to column 44 line 36. Despite this, Matsuba, as cited by the Examiner, does not teach, disclose or otherwise suggest a step to reduce to give metal nano-particles, much less the specific reducing steps claimed in newly amended independent claim 9. Further, Matsuba also fails to disclose, teach or otherwise suggest a step to reduce impurities in such a liquid, much less the specific impurity reducing steps claimed in newly amended claim 9. In fact, neither the word “impurity” nor the word “impurities” is mentioned in the specification of Matsuba, as cited by the Examiner.

For at least the above reasons, Applicants respectfully submit that Matsuba does not anticipate newly amended independent claim 9, nor claims 12, 13 and 21-25 that ultimately depend on newly amended independent claim 9. Applicants also respectfully submit that Matsuba does not anticipate newly added independent claims 26, 30 and 34, nor claims 27-29, 31-33 and 35-37 that ultimately depend on these claims. Accordingly, Applicants respectfully request

reconsideration and withdrawal of the rejections under 35 U.S.C. §102(e) over Matsuba made in the Office Action dated December 15, 2008.

Rejection Under 35 U.S.C. §103

Claims 10, 11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over (1) Nagasawa; (2) Komatsu; or (3) Peng further in view of Toshihiro et al, JP 2002-121,606, hereinafter “Toshihiro.” It is noted that claims 10, 11 and 14-20 have been cancelled and claims 9 and 13 have been amended. Further, the subject matter of former independent claim 17 has been incorporated into newly added independent claims 26, 30 and 34. To the extent that these rejections apply to claims currently pending, they are respectfully traversed because both Toshihiro does not cure the deficiencies of Nagasawa; Komatsu, or Peng with respect to independent claims 9, 26, 30 and 34 above.

In particular, Toshihiro does not cure the deficiencies of Nagasawa; Komatsu, or Peng with respect to “additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas” and “after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced,” as claimed in independent claims 9, 26, 30 and 34. The Applicants respectfully submit that

Toshihiro, as cited by the Examiner, either in independently or in combination with Nagasawa, Komatsu, or Peng fails to disclose the methods as claimed.

Toshihiro does disclose metallic hyperfine grain dispersed solution and its production method (title). Toshihiro gives several examples of the best mode for carrying out the invention (see Detailed Description of the Invention, paragraphs [0005]-[0025]). Despite this, Toshihiro, as cited by the Examiner, does not teach, disclose or otherwise suggest the specific reducing steps claimed in independent claims 9, 26, 30 and 34. Further, Toshihiro also fails to disclose, teach or otherwise suggest a step to reduce impurities in such a liquid, much less the specific impurity reducing steps claimed in independent claims 9, 26, 30 and 34. In fact, the words “impurity,” “impurities” are not mentioned in the specification of Toshihiro, as cited by the Examiner.

The Examiner implicitly admits that the specific reducing methods claimed in independent claims 9, 26, 30 and 34 are absent from the cited references. However, the Examiner contends that “hydrogen gas, carbon monoxide and gasses containing hydrogen and CO are known as reducing gases in the art.” However, the Examiner fails either to provide a single reference supporting this contention or to take official notice. The Applicants respectfully request that the Examiner provide a basis for this contention.

In addition, each of the cited references fails to teach “preparation of a metallic wire or a metal film,” as claimed in independent claims 26, 30 and 34, much less the step of “firing the coated layer of the dispersion to thus form a thin metallic wire or a metal film having conductivity,” as claimed in independent claim

34. The Examiner relies on Toshihiro to teach the “application of such a dispersion in the formation of metal wire or film” and, in particular cites paragraphs [0001] and [0012] of Toshihiro. However, the word “wire” is not mentioned in the English translation of the specification of Toshihiro. This application is completely absent from paragraph [0012] which, instead, discusses only properties of the dispersion itself. Paragraph [0001] does mention the use of the dispersion for “the internal wiring of a semiconductor” and the “formation of a transparent conducting film,” the English translation of Toshihiro does not specifically refer to these connections as either “metallic wire” or “metallic film” nor is this clear from Toshihiro, as cited by the Examiner.

For at least the above reasons, Applicants respectfully submit that the combination of Toshihiro with Nagasawa; Komatsu, or Peng does not render any of the independent claims 9, 26, 30 and 34 obvious. For similar reasons, Applicants respectfully submit that the combination of Toshihiro with Nagasawa, Komatsu, or Peng does not render obvious any of the dependent claims 12, 13, 21-25, 27-29, 31-33 and 35-37 that ultimately depend from these independent claims. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) over Toshihiro, Nagasawa; Komatsu, and Peng made in the Office Action dated December 15, 2008.

Claims 10-11 and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuba and further in view of the Examiner’s

discussion on pages 7-8 of the Office Action. It is noted that claims 10, 11 and 14-20 have been cancelled and claims 9 and 13 have been amended. Further, the subject matter of former independent claim 17 has been incorporated into newly added independent claims 26, 30 and 34. To the extent that these rejections apply to claims currently pending, they are respectfully traversed because the Examiner's discussion on pages 7-8 of the Office Action does not cure the deficiencies of Matsuba with respect to independent claims 9, 26, 30 and 34 above.

In particular, the Examiner's discussion on pages 7-8 of the Office Action does not cure the deficiencies of Matsuba with respect to "additionally while adding the reducing agent introducing, into the liquid, hydrogen gas, carbon monoxide gas, a hydrogen-containing gas or a carbon monoxide-containing gas" and "after the adding the reducing agent, adding deionized water to the liquid, followed by stirring the resulting mixture and then allowing the mixture to stand so that impurities present in the liquid are transferred to a polar solvent and that the impurity concentration in the non-polar solvent is reduced," as claimed in independent claims 9, 26, 30 and 34. The Applicants respectfully submit that Matsuba, as cited by the Examiner, either independently or in combination with the Examiner's discussion on pages 7-8 of the Office Action fails to disclose the methods as claimed. The Examiner's discussion on pages 7-8 of the Office Action does not, in fact, address the claimed features above. Rather, the Examiner's discussion is limited to the concentration of metal particles in the dispersion. Although the Examiner's contention

that the claimed metal particle concentration would be obtained through “obvious routine experimentation” is respectfully disputed, the Applicants point out that the Examiner has not accounted for the claimed features cited above in the rejection.

The Examiner implicitly admits that the specific reducing methods claimed in independent claims 9, 26, 30 and 34 are absent from the cited references on page 7 of the Office Action. However, the Examiner contends that “hydrogen gas, carbon monoxide and gasses containing hydrogen and CO are known as reducing gases in the art.” However, the Examiner fails either to provide a single reference supporting this contention or to take official notice. The Applicants respectfully request that the Examiner provide a basis for this contention.

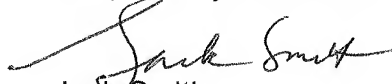
For at least the above reasons, Applicants respectfully submit that claims 10-11 and 13-20 are not obvious over the proposed combination of Matsuba and the Examiner’s discussion on pages 7-8 of the Office Action. Thus, Applicants respectfully request reconsideration and withdrawal of the rejections under 35 U.S.C. §103(a) over Matsuba in view of the Examiner’s discussion on pages 7-8 of the Office Action.

CONCLUSION

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event that this paper is not being timely filed, Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to Counsel's Deposit Account Number 01-2300, referencing Docket Number 029929-00025.

Respectfully submitted,



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